



**NEAR-SURFACE GEOPHYSICS FOCUS GROUP
NEWSLETTER: APRIL 2014**

In brief:

- 1. 2014 AGU Fall Meeting Session Proposals**, Due 9 April 2014
- 2. Early Career – *The Postdoc Experience: Taking a Long Term View***
- 3. INTERPRETATION Special Issue: Geophysical Imaging and Interpretation of Outcrops**, Submission Deadline 30 August 2014
- 4. Editor in Chief Needed for Geophysical Research Letters**
- 5. Upcoming Conferences and Workshops**
 - 5.1. Joint SEG/AGU Summer Research Workshop: Advances in Active+Passive “Full Wavefield” Seismic Imaging, 21-24 July 2014
 - 5.2. Multichannel Analysis of Surface Wave (MASW) Workshop, 24-25 April 2014
 - 5.3. Near Surface Geoscience 2014: 20th Meeting of Env. & Eng. Geophysics, 14-18 Sept 2014
 - 5.4. First Applied Shallow Marine Geophysics Conference, 14-18 Sept 2014
 - 5.5. GEM Chengdu 2015: Gravity, Electrical and Magnetic Methods and Their Applications
- 6. Position Announcements**
 - 6.1. Faculty Position in Computational Modeling and Inversion Algorithms, University of Houston
 - 6.2. Electromagnetic Geophysicist, GroundMetrics
 - 6.3. Geotech Field Specialist Intern, GroundMetrics

Recent announcements of interest to the NS community (conferences, academic positions, graduate student opportunities etc.) can be found at the AGU NS Focus Group Web

Page: <http://sites.agu.org/nsg/>

Follow NSFG on Twitter @NS_AGU!

1. 2014 AGU Fall Meeting Session Proposals (from Xavier Comas)

The deadline for session proposals for the 2014 AGU Fall Meeting is quickly approaching (9 April 2014). Submission of session proposals will be officially opening soon at:

<http://fallmeeting.agu.org/2014/scientific-program/session-proposal-guideline/>

The Near Surface Geophysics Focus Group is planning on several sessions and is looking for students interested in getting involved with helping convening some of these sessions. Any students interested please email Xavier Comas (xcomas@fau.edu).

2. Early Career – *The Postdoc Experience: Taking a Long Term View* (from Nedra Bonal)

Check out the short article titled "*The Postdoc Experience: Taking a Long Term View*"

(http://sciencecareers.sciencemag.org/career_magazine/previous_issues/articles/2010_08_27/science.opms.r1000093). The article contains information that is relevant to all Early Career scientists including: mentoring, funding, networking, and having a back-up plan.

Please contact Nedra Bonal at nbonal@sandia.gov for comments or questions about Early Career topics.

3. INTERPRETATION Special Issue: Geophysical Imaging and Interpretation of Outcrops
(from Remke van Dam)

See next page for more information!

CALL FOR PAPERS

► **Submission deadline:**
30 August 2014

<https://mc.manuscriptcentral.com/interpretation>

A joint publication of SEG and AAPG

Interpretation™

A journal of subsurface characterization



Society of Exploration
Geophysicists
The international society
of applied geophysics



AAPG
Advancing the World of Petroleum Geosciences™

Geophysical imaging and interpretation of outcrops

Outcrops have long been studied as analogs for rocks rich in natural resources, including hydrocarbons, minerals, and groundwater. Outcrops provide highly detailed information on facies assemblages, stratigraphy, textural and petrographic variability, and fracture patterns, among others. However, except in a few exceptional cases, this information is strictly two-dimensional. Geophysical tools allow for a "look behind the cliff," thus enabling 2D outcrop analog data to be extended into the third dimension. Such geophysical investigations can be operated from the cliff top, cliff face, and boreholes.

With the increasing demand for unconventional, geothermal, mineral and water resources as exploration targets there is a renewed interest in detailed outcrop studies. For this special section of *Interpretation*, we invite papers that focus on applying geophysical tools (e.g., seismic, ground-penetrating radar, and downhole geophysical logging) for imaging and interpretation of outcrops. We also invite papers that use Lidar and high-resolution outcrop imagery in combination with behind-the-cliff geophysical data or synthetics.

The focus of the work can be on geophysical imaging and modeling, 3D facies analysis and sequence stratigraphy, studies of deformation and faulting, mineralization, fracture zones, and generating high-resolution input for geological modeling of both sedimentary and crystalline systems. Case studies for specific outcrop analogs are also welcomed.

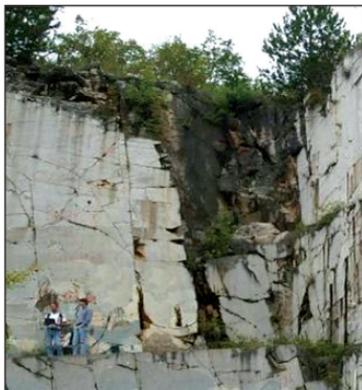


Image courtesy of M. Pipan

Interpretation, copublished by SEG and AAPG, aims to advance the practice of subsurface interpretation.

The submissions will be processed according to the following timeline:

Submission deadline:
30 August 2014

Publication of issue:
May 2015

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4. Editor in Chief Needed for Geophysical Research Letters

AGU is looking for a dynamic, well-organized scientist with high editorial standards and strong leadership skills to serve a 4-year term as the editor in chief for this journal.

The Editor-in-Chief is the principal architect of the scientific content of the journal. The EIC is an active scientist, well-known and well-regarded in his/her discipline. The EIC must be active in soliciting the best science from the best scientists to be published in the journal. Working with the other editors and AGU staff, the EIC is the arbiter of the content of the journal. Among other functions, the EIC is responsible for:

- **Act as an ambassador to the author/editor/reviewer/scientist community.**
- **Set the strategy for the journal.**
- **Lead the editor selection process.**
- **Assign and balance review work load.**
- **Decisions of ethics.**
- **Review and contribute to periodic monitoring reports.**
- **Conduct and attend meetings.**

Journal Scope: *Geophysical Research Letters* publishes short, concise research letters that present scientific advances that are likely to have immediate influence on the research of other investigators. GRL letters can focus on a specific discipline or apply broadly to the geophysical science community.

GRL is a Letters journal; limiting manuscript size expedites the review and publication process. GRL also publishes a limited number of frontier articles, by invitation from Editors. GRL's mission is to disseminate concisely written, high-impact research reports on major scientific advances in AGU disciplines. With this goal, the Editorial Board evaluates manuscripts submitted to GRL according to the following criteria:

- High impact innovative results with broad geophysical implications at the forefront of one or several AGU disciplines.
- Results with immediate impact on the research of others and requiring rapid publication.
- Instrument or methods manuscript introducing an innovative technique that makes new science advance possible, with immediate applications to AGU disciplines.

GRL has been in publication since 1974. The Editors are adapting GRL to the evolving needs of the Earth science community. GRL Editors are topical: the subject of the paper determines which Editor handles the review and decision process.

If you would like to be considered for the Editor in Chief position of *Geophysical Research Letters*, send your curriculum vitae with a letter of interest via email to pubmatters@agu.org. If you would like to nominate a highly qualified colleague, send a letter of recommendation to the same email address.

Please make sure that you specify *Geophysical Research Letters* in the subject line of the email.

Deadline for applications is 15 April 2014

5. Upcoming Conferences and Workshops

5.1 Joint SEG/AGU Summer Research Workshop: Advances in Active + Passive “Full Wavefield” Seismic Imaging: from Reservoirs to Plate Tectonics (from Louise Pellerin)

Workshop Dates: 21-24 July 2014

Abstract Deadline: 1 May 2014

Website: [click here to follow link](#)

Rapid developments are occurring in advanced seismic imaging and inversion research, using “full wavefield” approaches, and very large broadband sensor arrays. These advances are happening at detailed reservoir scales (hydrocarbons, geothermal, groundwater, CO₂ sequestration...), up to much larger earthquake seismology and global plate tectonics scales. The purpose of this joint SEG-AGU summer research workshop is to bring together leading scientists in full wavefield seismic imaging/inversion research from across a broad spectrum to share their knowledge and challenges, compare notes and find synergies that may lead to new collaborations and breakthroughs in imaging the Earth.

5.2 Multichannel Analysis of Surface Wave (MASW) Workshop (from Mary Brohammer)

Conference Date: 19-20 June 2014

Location: Kansas Geological Survey (KGS), Lawrence, Kansas

Conference Website: <http://www.kgs.ku.edu/software/surfseis/workshops.html>

The two-day MASW workshop will provide opportunity for geo-professionals, geoscientists, and graduate students to gain knowledge about acquisition, analysis, and interpretation of the seismic Rayleigh surface waves. The learning process will be facilitated by the use of SurfSeis software (<http://www.kgs.ku.edu/software/surfseis/index.html>). The workshop is designed to address the current approaches for analyzing seismic data from both active and passive sources for obtaining shear-wave velocity (V_s) estimates for the near-surface.

On Day 1 a theoretical overview of the MASW method (active and passive) will be presented, participants will be familiarized with the SurfSeis software package, and field data acquisition from both active and passive sources is scheduled take place (weather permitting).

Day 2 will continue with the theoretical MASW overview covering surface-wave inversion, multi-mode interpretation and inversion, inversion sensitivity, use of a-priori information and quality of inversion results, latest advancements for dispersion-curve imaging—such as the high-resolution linear Radon transform (HRLRT), challenging dispersion-curve patterns, and more. Day-1 acquired seismic data will be analyzed. Participants are encouraged to bring samples of their own data for discussion as time permits. Attendees are expected to bring their own laptops.

5.3 Near Surface Geoscience 2014: 20th Meeting of Env. & Eng. Geophysics (from George Tsoflias)

Conference Date: 14-18 September 2014

Location: Athens, Greece

Conf. Website: <http://www.eage.org/events/index.php?evp=10580&ActiveMenu=2&Opendivs=s3>

Extended Abstract Deadline: 15 April 2014

5.4 First Applied Shallow Marine Geophysics Conference (from Mark Vardy)

Conference Date: 14-18 September 2014

Location: Athens, Greece

Conf. Website: <http://www.eage.org/events/index.php?evp=12577&ActiveMenu=2&Opendivs=s3>

Extended Abstract Deadline: 15 April 2014

Sponsored by EAGE, the conference aims to bring together practitioners and researchers from industry and academia who develop and apply geophysical methods to the seafloor and shallow overburden. While major recent advances have been made in reservoir geophysics, the shallow overburden has traditionally received significantly less attention, despite having a heavy influence on wave propagation to deeper reservoir targets and being host to a number of geohazards. These include shallow water flows, shallow gas, hydrates, landslides, glaciotectonics, and sediment flows, along with geomorphological features such as pockmarks, pipes, diapirs, channels, canyons, boulders, ploughmarks, faults, and seepage mounds.

The technical committee strongly encourage papers that demonstrate the current state-of-the-art and present lessons learned from case studies. This will set the scene to identify new trends and technologies required to help in geophysical site characterisation and geohazard assessments: from survey design and acquisition to quantitative and integrated data interpretation techniques. For the full conference announcement see:

www.eage.org/images/cms/files/Conferences/NSG14%20SMG%20first%20announcement.pdf

5.5 GEM Chengdu 2015: Gravity, Electrical and Magnetic Methods and Their Applications

Conference Date: 19-22 April 2015

Location: Chengdu, China

Conf. Website: www.seg.org/events/upcoming-seg-meetings/gem-chengdu-2015

The Workshop will focus on electrical, electromagnetic, gravity, magnetic, and nuclear magnetic resonance methods. You are invited to submit abstracts and attend the workshop. An online submission system will be open in the first week of October 2014.

6. Position Announcements

6.1 Faculty Position in Computational Modeling and Inversion Algorithms, University of Houston

Applications are invited for a faculty position at any level (Assistant/Associate/Full Professor) in computational multi-physics modeling and inversion algorithms. We are interested in attracting an individual with expertise in geophysical applications of interest to the oil and gas industry, especially well logging, and measuring the properties of rock samples.

Qualifications: Applicants must have an earned doctorate in electrical engineering, physics, or a closely related field.

University and Department: The University of Houston is located in a park-like campus close to major oil and gas companies. The Carnegie Foundation recognized UH as a public research university with very high research activity. The department has embarked on an exciting period of research growth driven by committed leadership. Houston is a thriving city with an internationally diverse population, first-rate recreational opportunities, excellent schools, and affordable housing.

Time Frame: The preferred start date of this appointment is 1 September 1 2014. Applications will be reviewed until the position is filled.

How to Apply: Please send a cover letter, curriculum vitae, a research statement, a teaching statement, and contact information for three or more references to: Prof. Badri Roysam, Department of Electrical and Computer Engineering, University of Houston, N325, Engineering Bldg. 1, Houston, Texas 77204-4005. Electronic copies of these documents should be sent as a single PDF file labeled "LastName-FirstName.PDF" to ECefacultysearch@EE.UH.EDU. Pre-application enquiries and visits are welcome.

The University of Houston is an equal opportunity/affirmative action employer. Minorities, women, veterans, and persons with disabilities are encouraged to apply.

6.2 Electromagnetic Geophysicist, GroundMetrics

See attached advertisement.

6.3 Geotech Field Specialist Intern, GroundMetrics

See attached advertisement.

Electromagnetic Geophysicist

February 24, 2014

GroundMetrics, Inc. Company Overview

San Diego-based GroundMetrics is an early stage company commercializing cutting-edge electromagnetic sensor technology for subsurface exploration and production. We offer advanced subsurface surveying and imaging technology, primarily to the oil and gas industry. Our work also has applications in the areas of mineral and geothermal exploration, and CO₂ sequestration. The company's unique technology and innovative approach unlock new applications and markets. The company is looking for a talented Electromagnetic Geophysicist with experience in the development, testing, and application of modeling and inversion software and workflows.

www.groundmetrics.com

Job Description

Apply theories, principles and practices to the research and development of electromagnetic modelling and inversion software and workflows. This is a full time position with rate of pay commensurate with education and experience.

Responsibilities

- Electromagnetic modeling and inversion software and workflow development and integration
- Processing electromagnetic data based on in-house techniques and procedures
- Performing electromagnetic modeling and inversion
- Interpret geophysical and related subsurface data to support exploration and monitoring projects

Desired Education and Work Experience

- Master degree or PhD in geophysics, physics, applied mathematics, signal processing, physics, or electrical engineering
- Experience with low-frequency electromagnetics
- Experience programming with MATLAB or Fortran
- Experience developing electromagnetic modeling software, preferably using finite element methods
- Experience developing electromagnetic inversion software
- Experience with geophysical data acquisition and processing systems desired
- Experience in oil and gas exploration and production desired

Qualifications

- Proficient in English
- High level of attention to detail, thorough, positive, good communication
- Thrives in a fast-paced, highly-autonomous start-up environment
- Team player with a great attitude
- Legally authorized to work in the United States, or willing to be sponsored to legally work in the United States under an appropriate employment-based visa

To apply, please email careers@groundmetrics.com with your resume and references.

Geotech Field Specialist Intern

February 24, 2014

GroundMetrics, Inc. Company Overview

GroundMetrics is an early stage company offering advanced subsurface surveying and imaging technology, primarily to the oil and gas industry. We aim to be a game-changer in energy development; our work also has applications in the areas of mineral and geothermal exploration and CO₂ sequestration. The company's unique technology and innovative approach unlock new applications and markets to aid balancing the world's energy portfolio. The company is looking for assistance field testing new and existing technology. www.groundmetrics.com

- Do you love to work outdoors?
- Would you like to contribute to the future of resource conservation?
- Are you looking to work for a cutting edge technology company and a market leader in the oil and gas industry?

If you said yes to any of these questions then this may be the right opportunity for you. We are looking for someone with a great attitude who wants to work in a start-up company setting where you can truly make a difference. If this is you then please APPLY NOW!

Job Description

Work closely with GroundMetrics' engineering team to perform field tests and gather data for analysis. This includes set up, operation, and packing up survey and communications equipment. Field Specialist Interns will work primarily outdoors in possibly rugged terrain.

Qualifications

- Available to work one day per week (6 to 10 hours) from now until the end of your Spring semester/quarter (May/June.)
- Available to work 20 to 50 hours per week from the end of your Spring semester/quarter (May/June) until the end of August (possibly early September).
- Available to travel for extensive periods of time to Pennsylvania, North Dakota, Montana, etc.
- Able to perform labor intensive activities such as hiking with a loaded backpack (30+ lbs), hiking in rough terrain, hiking in extreme heat or cold, lifting more than 50 lbs.
- Has a valid driver's license, a clean driving record, and a vehicle to drive throughout San Diego County.
- Ability to think clearly and methodically to troubleshoot and problem solve various issues in the field.
- Have a love for the outdoors.
- Team player with a great attitude.
- Proficient in English.
- Resourceful, high level of attention to detail, thorough, positive, good communication.
- Thrives in a fast-paced, highly-autonomous startup environment.



- Legally authorized to work in the United States.

Desired Education and Work Experience

- Currently enrolled in a B.S. or graduate degree program
- All degrees are welcome however one of the following or like degrees would be a plus – geophysics, geology, petroleum engineering, reservoir engineering, signal processing, electrical engineering, mechanical engineering, manufacturing engineering, systems engineering, mathematics, computer programming.

Application requirements

- Resume
- Cover letter: Tell us why you are such an amazing fit for this position. Please also include what days and times you can work between now and the end of your Spring semester/quarter.
- Three References
- Letters of recommendation are welcome, but are not required.
- Return application materials to careers@groundmetrics.com

This position is temporary with potential to be permanent at some point in the future. No phone calls, please.

TO CONTRIBUTE MATERIAL TO THE NSFG NEWSLETTER SEND AN E-MAIL TO:

Stephen Moysey (smoysey@clemsn.edu)

DEADLINE: Material must be received 5 full business days prior to the first of each month.

GUIDELINES FOR SUBMISSIONS: All members are welcome to submit content of interest to the NS community. Please keep messages brief and provide contact information and (if available) a web address for additional information.

GET YOUR MESSAGE OUT NS MEMBERS FASTER:

You will no longer need to wait until the end of the month to share an important or time-sensitive contribution to the newsletter. Appropriate contributions to the newsletter will also be shared ASAP via Twitter. Please note that only NSFG members that follow [@NS_AGU](#) will receive Twitter announcements, so make sure that you sign up!